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June 12, 1992

Ms. Donna Searcy
Secretary
Federal Communications Commission
Room 222
Washington, D.C. 20554

Re: Motorola Satellite Communications, Inc. Request for Pioneer's Preference, ET
Docket No. 92-28, File No. PP-32

Dear Ms. Searcy:

Attached are the original and required copies of the comments of Loral Qualcomm Satellite Services, Inc. on the supplemental material filed by Motorola Satellite Communications, Inc., with regard to its request for a pioneer's Preference.

Please contact the undersigned if there are any questions in this matter.

Sincerely yours,

Leslie A. Taylor

Attachments

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Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

FEDERAL COMMUNICATIONS COMMISSION
OFFICE OF THE SECRETARY

In the Matter of:
MOTOROLA SATELLITE
COMMUNICATIONS, INC.

)
) **ET Docket No. 92-28**
) **File No. PP-32**
)

Request for a Pioneer's
Preference with regard to
Its Application for Authority
To Construct Iridium™, a
Low-Earth Orbit Satellite
Communications System

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Comments of Loral Qualcomm Satellite Services, Inc.
on Motorola Supplemental Filing

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June 12, 1992

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EXECUTIVE SUMMARY

The Commission cannot and should not grant Motorola's request for a pioneer's preference. Such a grant would be unlawful and would effectively preclude grant of other, mutually exclusive proposals such as that of Loral Qualcomm Satellite Services, Inc. The Commission should focus on the pending rulemaking petitions and applications rather than further delaying these proceedings by consideration of Motorola's request for pioneer's preference.

Any award of a pioneer's preference in this proceeding must be consistent with the purposes and goals of the pioneer's preference, including making available new telecommunications services, promoting efficient use of spectrum, multiple entry and providing low-cost service. The Motorola proposal meets none of these criterion. Award of a preference should also be consistent with the representations made by the United States at WARC-92 that multiple low-earth orbit systems can operate in the 1610-1626.5 MHz and 2483.5-2500 MHz frequency bands. Grant of a preference to Motorola would abrogate this commitment of the United States to the international telecommunications community.

The supplemental material filed by Motorola in support of its pioneer's preference should not be considered by the Commission as it lacks probative value and does not demonstrate innovativeness. This material consists of news clippings, articles, press releases, videotapes, purported test results, patents and patent application material. These items are lacking in probative value because they demonstrate nothing. Patent applications should not be considered by the Commission in evaluating a request for a pioneer's preference because applications are not determinative of innovativeness and the Commission lacks the mandate and the expertise to evaluate such material. The experimental test results demonstrate nothing with respect to the Commission's preference criteria because they do not provide information as to the test environment, methodology used and validation mechanisms.

Even with regard to the patents submitted, Motorola provides no explanation as to their relationship to the innovations of the Iridium™ system which it seeks to demonstrate. In fact, Motorola provides virtually no explanation of the nexus between the supplemental material and the requirements of the pioneer's preference rules.

As discussed in previous LQSS filings, Motorola's claimed innovations for Iridium™ can be found in other satellite systems and the existing literature on satellite communications systems. In contrast, LQSS' request for a pioneer's preference is supported by demonstrated innovations, including several recently granted patents which will be utilized in the Globalstar™ system. The Commission can and should grant a pioneer's preference to LQSS for these innovations which will be employed in a spectrally efficient system providing new communications services at low-cost in a manner compatible with the operation of other systems.

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Its Application for Authority)	
To Construct Iridium™, a)	
Low-Earth Orbit Satellite)	
Communications System)	

**Comments of Loral Qualcomm Satellite Services, Inc.
on Motorola Supplemental Filing**

Loral Qualcomm Satellite Services, Inc., ("LQSS"), by its attorneys, respectfully submits its comments¹ with regard to the supplemental materials filed by Motorola Satellite Communications, Inc., ("Motorola") in support of its request for a pioneer's preference.

I. Summary and Background of this Proceeding

The supplemental materials filed by Motorola should not be used in any evaluation of its request for pioneer's preference, nor do they provide a basis on which to grant a preference. Motorola's supplement consists of news clippings, patent applications, patent extracts, a paper presented in China, and assorted test materials including videotapes. The news clippings and the patent applications lack probative value in any determination with respect to an award of a preference that is to be based on evidence of technological innovation. The experimental test results demonstrate nothing with respect to the Commission's preference criteria because they do not provide information as to the test environment, methodology used, and validation

¹ A separate document has been filed pursuant to the procedures outlined in the FCC's Protective Order in DA 92-674, FOIA Control No. 92-83, 92-88 and 92-86, released May 28, 1992 by the Chief Engineer, Federal Communications Commission, which provides LQSS' comments on the Motorola confidential material.

mechanisms. The relationship of the patents to Motorola's system proposal as well as its claims for a pioneer's preference is nowhere explained. In sum, the materials filed do not support Motorola's request and must not be relied on by the Commission.

Moreover, as LQSS has maintained throughout this proceeding², a grant of a pioneer's preference to Motorola, since Motorola is proposing a monopoly service which would exclude the other applicants from a portion of the RDSS band, would be unlawful, because it would deny the other RDSS applicants the right to comparative consideration, as provided in Section 310 of the Communications Act, 47 U.S.C. 310 and Ashbacker v. FCC, 326 U.S. 327 (1945), ("Ashbacker").

Today, LQSS has filed supplemental material with respect to its request for a pioneer's preference for its low-earth orbit system application proposing the provision of voice, data and radio-determination satellite service. This supplemental material, filed as part of the public record in this proceeding and available for full and open public review, along with LQSS previous submissions concerning its pioneer preference request, demonstrate why LQSS should receive a pioneer's preference for its system.³ The Commission can grant a pioneer's preference to LQSS without prejudice to the other parties in this proceeding, as LQSS' proposal could operate compatibly with other LEO MSS systems.

The essence of this proceeding are the applications before the Commission to use the 1610-1626.5 MHz and 2483.5-2500 MHz bands by low-earth orbit satellites for the provision of voice, data and RDSS service. As LQSS has repeatedly argued, prior to considering those applications, the Commission should consider the pending petitions for rulemaking to amend the current RDSS rules to enable the provision of voice service in those bands. In the context of that

² See, Consolidated Opposition to Petitions to Deny of Loral Qualcomm Satellite Services, Inc., January 31, 1992; Consolidated Reply Comments of Loral Qualcomm Satellite Services, Inc., March 27, 1992, Reply Comments of Loral Qualcomm Satellite Services, Inc., April 23, 1992, Comments of Loral Qualcomm Satellite Services with regard to TRW Inc. Motion for Stay, May 19, 1992.

³ Ellipsat Corporation, on June 5, 1992, also filed supplemental information with regard to its request for a pioneer's preference in this proceeding. Ellipsat has requested confidential treatment for a portion of this material.

rulemaking, the Commission can also consider the amendment of the Commission's rules to comport with the results of the recently concluded 1992 World Administrative Radio Conference which allocated the subject bands on a worldwide basis to mobile-satellite service as well as RDSS.⁴

Unfortunately, Motorola has continued to press the Commission from every angle -- an experimental application proposing the deployment of a full orbital plane of its system, a Section 214 application to use facilities not yet authorized, a supplement to its pioneer's preference request containing press clippings, and so-called privileged material.⁵

LQSS recently wrote the Commission regarding its concerns that:

Any interim or piecemeal steps the Commission takes involving the RDSS applications and related requests are likely to create the ultimate technological and market structure through which these services reach the public, even if the Commission intends these steps to be only interim. LQSS thus urges the Commission in the strongest possible terms to resist Motorola's attempts to pressure it to act on its pending experimental license, pioneer's preference and Section 214 requests. The Commission should and must focus on the generic issues concerning RDSS licensing, service, and spectrum standards and not allow itself to get sidetracked and ultimately derailed by these ancillary requests.⁶

Now, the parties and the Commission have been further sidetracked by Motorola's material for which partial confidential treatment has been granted. The granting of confidentiality

⁴ See, The Final Acts of the World Administrative Radio Conference (WARC-92), Malaga-Torremolinos, including the Addendum and Corrigendum. See also, Resolution COM5/8, Interim Procedures for the Coordination and Notification of Frequency Assignments of Non-Geostationary Satellite Networks in Certain Space Services and Other Services to Which the Bands are Allocated, at 101 of the Final Acts.

⁵ Motorola's barrage of filings continued on June 9, 1992 when it filed a "Petition for Expedited Action" asking the Commission to process the pending applications without delay and including a proposal to allocate the 1616-1626.5 MHz band on a monopoly basis to Motorola, and suggesting spectrum "alternatives" for the uplink operations of the other LEO MSS applicants, including LQSS.

⁶ See, Letter of LQSS to Chairman Sikes, Commissioner Quello, Commissioner Marshall, Commissioner Barrett and Commissioner Duggan, dated May 8, 1992.

has created a situation which precludes full and open debate over the proof Motorola is offering in support of its request for a preference. The granting of confidentiality has imposed burdens on the parties submitting comments and subjected those parties to potential legal liability.

But, perhaps most important, the material for which confidentiality has been granted, in the view of LQSS, does not warrant confidentiality and most certainly, does not support a grant of a pioneer's preference to Motorola.

Moreover, LQSS has submitted a request for pioneer's preference, for which additional material has been filed today, which can and should be granted.

II. The Commission Cannot Lawfully Grant Motorola's Request for Pioneer's Preference Without Violating the Rights of the Other Applicants in the RDSS Proceeding

The Commission, in this very important proceeding involving new and useful telecommunications services, must proceed carefully to address the pending applications in a lawful manner. Only by so doing can the Commission avoid extensive delay that would be occasioned by court review of precipitous action, such as granting a tentative pioneer's preference to Motorola, when faced with mutually exclusive applications.

In addition, the Commission must consider the public policy issues involved, including the rationale for its pioneer preference rules, and the basis on which 125 nations agreed to add mobile-satellite service to the RDSS bands.

A. The Commission Cannot Grant a Pioneer's Preference to an Applicant Whose Proposal Would Effectively Preclude Grant of Other, Mutually Exclusive Proposals

LQSS, as well as the other applicants in this proceeding, have demonstrated to the Commission that grant of a pioneer's preference to Motorola would be inconsistent with the Communications Act as well as legal precedent, including Ashbacker.

TRW Inc. has filed a Motion for Stay of Commission action in the RDSS pioneer preference proceeding asking the Commission to refrain from grant of any preference until it resolves the issues raised in pending petitions for further reconsideration of the pioneer preference

rules.⁷ The Petition for Stay persuasively shows that TRW, as well as the other applicants for the RDSS bands, would be irreparably harmed if the Commission grants even a "tentative" preference to Motorola. TRW shows that where two or more mutually exclusive applications have been filed prior to the submission of pioneer's preference requests, use of the preference imposes a new threshold application criterion which would deprive the applicants of meaningful comparative consideration as required by Ashbacker.

Constellation Communications and Ellipsat filed comments in support of the Motion for Stay. LQSS filed comments reiterating that the pending petitions for further reconsideration of the pioneer preference rules should be acted on prior to Commission consideration of preference requests in ET Docket No. 92-28,⁸ and that the Commission should not "allow the use of the pioneer preference to shape the rulemaking to Motorola's system which would monopolize a critical portion of the RDSS spectrum and preclude multiple system providers."⁹

The public and the RDSS applicants deserve the opportunity for full and fair consideration of the pending applications. To preempt this consideration through the award of a pioneer's preference to Motorola would deny these rights and could subsequently deny the United States public as well as the world the opportunity to receive high-quality, cost-effective new communications service on a competitive basis.¹⁰

LQSS urges the Commission to abide by these important requirements in determining its response to Motorola's request for pioneer's preference. In addition, LQSS suggests that the Commission focus clearly on what Motorola, in fact, is requesting.

Motorola is not requesting a pioneer's preference so that it has assurance it can provide service, along with other parties, in the RDSS bands. Motorola is requesting a preference for use

⁷ See, Petitions for Further Reconsideration filed by TRW Inc. and LQSS in GEN Docket No. 90-217, Establishment of Procedures to Provide a Preference to Applicants Proposing an Allocation for New Services, 6 FCC Rcd 3488 (1991) ("Pioneer's Preference Order"), recon. in part, 7 FCC Rcd 1808 (1992) ("Pioneer's Preference Reconsideration Order"), recon. pending.

⁸ See, Comments of LQSS filed May 19, 1992, with regard to TRW Inc. Motion for Stay.

⁹ LQSS Comments, supra. at p.3.

¹⁰ See, LQSS Reply Comments, dated April 23, 1992.

of the 1616-1626.5 MHz band, on a monopoly basis, along with new rules for the RDSS bands which would permit only it such monopoly use of the public airwaves for its system.

Motorola itself has been quite clear about its intentions.¹¹ In Motorola's Reply Comments on the RDSS applications, filed January 31, 1992, Motorola squarely proposes a band-segmentation approach pursuant to which it would operate in the upper 10.5 MHz of the 1610-1626.5 MHz band by itself. Motorola then goes on to suggest that other applicants found qualified could operate in the lower 6 MHz of the L-band RDSS spectrum (along with GLONASS and radioastronomy systems) and the 2483.5-2500 MHz band. Unfortunately, Motorola does not provide the technical detail as to how other system(s) are to operate within 6 MHz of the L-band spectrum when they have GLONASS and radioastronomy systems to coordinate with as well as each other.

In addition, Motorola neglects to explain how its system proposal qualifies for a pioneer's preference by promoting efficient use of the spectrum, supporting multiple service providers or by bringing new communications services to the public at lower cost. These serious questions as well as the feasibility of Motorola's complex system to meet service objectives remain unanswered and unproven. The Commission must maintain its focus on promoting the public interest in having access to new telecommunications services, which is far more likely to occur through implementation of realistic systems such as Globalstar™, than through giving in to Motorola's demands for a monopoly spectrum allocation.

B. A Grant of a Pioneer's Preference to Motorola Would Be Inconsistent with the Purposes of the Pioneer's Preference

Acceding to Motorola's request for pioneer's preference would be wholly inconsistent with the Commission's stated objectives in establishing the pioneer's preference rules. The purpose of the pioneer's preference, the Commission said, is to reward innovative proposals that

¹¹ See, Motorola Petition for Expedited Action, at p. 16, cited *supra*, which states, "Motorola would require the bidirectional use of only 10.5 MHz of spectrum from 1616-1626.5 MHz. Motorola's system would used FDMA/TDMA modulation, and could not operate using CDMA or spread spectrum modulation techniques. In Motorola's view, this bidirectional allocation must be separated from the remainder of the RDSS/MSS band."

promise to "enable the sharing, co-use, of allocated spectrum," "yield efficiencies in spectrum use...or spectrum sharing, or which significantly reduce costs to the public."¹² As stated in previous LQSS submissions,¹³ Motorola's proposal (including its attempt to promote band splitting as well as a Motorola monopoly) blocks rather than enables "sharing" or "co-use" of "allocated spectrum," does not "yield efficiencies in spectrum use...or spectrum sharing," and increases rather than reduces costs to the public.

Grant of any, let alone a tentative preference, to Motorola would seriously jeopardize the important goals of promoting efficient use of spectrum and competitive service provision, as well as the important goals of making services available by competing providers, which the Commission has found repeatedly to serve the public interest.

C. A Grant of a Tentative Pioneer's Preference to Motorola Would Abrogate the Commitment of the United States to Multiple Systems Made at WARC-92

A grant of even a tentative pioneer's preference to Motorola would fly in the face of 20 years of Commission pro-competitive telecommunications policies, reaffirmed as recently as April 8, 1992.¹⁴ Moreover, sending a signal that the Motorola proposal to monopolize 10.5 MHz of precious spectrum resource was even tentatively acceptable would be a serious breach of faith of the United States within the international telecommunications community.

At WARC-92, the United States demonstrated to other nations that multiple systems could provide low-earth orbit communications service in the RDSS bands. At the request of Ambassador Jan Baran, Chairman of the U.S. delegation to WARC-92, the RDSS applicants proposing low-earth orbit systems developed papers and materials to show other administrations that multiple systems could operate compatibly in the bands. These efforts enabled the

¹² Pioneer's Preference Order, footnote 5, supra. at paras. 37 and 48.

¹³ See, Consolidated Opposition to Petitions to Deny of Loral Qualcomm Satellite Services, Inc., January 31, 1992 at 4-5, 32, 41 and Consolidated Reply Comments of LQSS, March 27, 1992 at 9-16, Technical Appendix Sections 3 and 4.

¹⁴ See, e.g., Permissible Services of U.S. Licensed International Communications Satellite Systems Separate from INTELSAT, FCC 92-95, released April 8, 1992, in which the Commission said: "It is the policy of this Commission to facilitate competition in domestic and international communications markets to the maximum extent possible."

conference to achieve a consensus to add mobile-satellite service to the 1610-1626.5 MHz and 2483.5-2500 MHz bands and a secondary allocation for mobile-satellite service (for the Motorola downlink) in the 1613.8-1626.5 MHz band.¹⁵ If the Commission proceeds to grant even a tentative preference to Motorola based on the Motorola TDMA system design which precludes sharing with any other system in the 1616-1626.5 MHz band, such action would be a breach of the commitment made by the United States at WARC-92. Some administrations are already concerned about this possibility as demonstrated by a request of the European Community for U.S.-EC talks about low-earth orbit satellites.¹⁶

D. Grant of a Tentative Pioneer Preference to Motorola Could Undermine the Pioneer Preference Rules

Concerned with the delays and uncertainties faced by proponents of new technologies, the Commission has tried to fashion a methodology of providing more certainty to innovators of new services and/or uses of spectrum. The Commission said:

(T)he Commission, in its discretion, will award a pioneer's preference to an entity that demonstrates that it (or its predecessor-in-interest) has developed an innovative proposal that leads to the establishment of a service not currently provided or a substantial enhancement of an existing service, provided, that the rules adopted for the new or existing service are a reasonable outgrowth of the proposal and lend themselves to the grant of a preference and a license to the pioneer.¹⁷

The Commission explained that, "(F)or purposes of the preference, we will consider the development of an innovative proposal to mean that the petitioner (or its predecessor-in-interest) has brought out the capabilities or possibilities of the technology or service or has brought them to a more advanced or effective state."¹⁸ Unfortunately, there remain many unresolved questions concerning the new pioneer preference rules.

¹⁵ WARC-92 Final Acts and Addendum and Corrigendum.

¹⁶ See, "EC Fears Prompt Satellite Talks," by Daniel J. Marcus, Space News, May 25-31, 1992.

¹⁷ Pioneer's Preference Order, para.47.

¹⁸ Supra., at para. 48.

How is innovation to be judged? What are the benchmarks? How is the innovation of one entity to be compared against the innovation of another? What role should patents and patent applications play in the process? Does the Commission have adequate expertise to make such judgments concerning highly technical issues?¹⁹ Should nationwide preferences be granted? When should multiple preferences be awarded? And, as discussed above, can the Commission make such a judgment when mutually exclusive applications are pending within the requirements of Section 310 of the Communications Act and Ashbacker?

LQSS suggests that the instant case is not one which the Commission should seek to test its new pioneer preference rules. Because of the complexity of the RDSS proceeding, the existence of mutually exclusive applications, and the importance of the proceeding to the applicants and the public, it could prove the old adage, "Hard cases make bad law."

III. The Commission Should Not Consider the Supplemental Material Filed by Motorola

Consideration of the pending RDSS applications and rulemaking requests are matters of utmost importance to the public as well as the applicants. The proceeding is a serious one, deserving of respect for the Commission's processes and full opportunity for public review and public comment on every aspect. Unfortunately, Motorola has chosen to take a tack which runs afoul of both of these standards.

A. The Non-Confidential Material Submitted by Motorola Lacks Probative Value and Does Not Provide Support for Motorola's Request for Pioneer's Preference

First of all, in Motorola's Preference Supplement, Motorola repeats the description of the Iridium™ system provided in its application and numerous pleadings, repeats claims about the technical performance of its system, provides again the "history" of the system and repeats its claims about the "innovativeness" and "feasibility" of the system. None of this is new. It is argumentation, not evidence. The bulk of the supplemental material Motorola attaches to its

¹⁹ The Commission itself realized the difficulties inherent in its pioneer preference order. "In the context of the comment process on the request for a pioneer's preference, we may wish to seek the opinion of specific individuals -- recognized experts in scientific disciplines that are relevant to proposals before the Commission." Supra. at para. 50.

repetitive puffery consists of newspaper clippings, press releases and media placements by Motorola's public relations consultants. As LQSS has stated previously, "these materials should be stricken, as they have no probative value."²⁰

Motorola does not and has not even offered an explanation of how these supplemental materials could or do establish its claims of innovativeness or feasibility of its system. Moreover, as to the patent extracts attached to the supplement, Motorola provides no explanation of the relationship of this material to its claimed system innovations.

Other RDSS applicants, including TRW Inc., Constellation and Ellipsat, have requested that these materials be disregarded. LQSS believes that the Commission will not be swayed by the evident effort of Motorola to turn this pioneer preference proceeding into a public relations circus. The materials filed may illustrate Motorola's public relations prowess, but in no way provide evidence of innovativeness with regard to the Iridium™ system proposal. Nonetheless, the Commission has chosen to invite comment on the Motorola so-called "supplemental" filing.²¹

B. Motorola's Claimed Innovations for Iridium Can Be Found In Other Satellite Systems and Prior Technical Work

LQSS as well as the other RDSS applicants have previously discussed Motorola's failures to demonstrate novelty or innovation in the Iridium system.²² These filings provide ample

²⁰ See, LOSS Motion to Strike and Opposition to Supplement to Request for Pioneer's Preference, filed April 23, 1992.

²¹ See, Low-Earth Orbit Satellite System above 1 GHz Request for Pioneer's Preference, ET Docket No. 92-28, PP-32, in which the Chief Engineer indicated that the supplemental material filed on April 10, 1992 by Motorola was accepted as a late-filed comment, and in which the Chief Engineer provided for filing of comments of this material by June 12, 1992.

²² See, LOSS Opposition to Motorola's Request for Pioneer's Preference, TRW Inc. Opposition to Motorola's Request for Pioneer's Preference, Opposition to Motorola's Request for Pioneer's Preference, Ellipsat Corporation's Opposition to Pioneer's Preference Request of Motorola Satellite Communications, Inc., AMSC Consolidated Opposition to Requests for Pioneer's Preference, Constellation Communications, Inc. Opposition to Pioneer's Preference Request of Motorola Satellite Communications, Inc., all filed April 8, 1992, as well as Reply Comments of these parties, filed April 23, 1992.

evidence that various components claimed by Motorola to be "innovative" have in fact been employed in numerous satellite communications systems over the past years. As TRW stated:

Motorola seeks a preference for an amalgamation of advances pioneered by others, which has produced a grandiose scheme that is spectrally inefficient, monopolistic, and too expensive to provide reasonably priced service to the public. Because Motorola is not the "developer or proponent" of the innovations it claims, it is not entitled to a pioneer's preference. See, TRW April 8, 1992 Comments at 13.

The parties point out that low-earth orbit satellite technology was not developed or substantially contributed to by Motorola.²³ In addition, the parties describe the use of inter-satellite links by NASA in the Tracking Data and Relay Satellite System (TDRSS) and the Department of Defense's MILSTAR system.²⁴ The inter-satellite links proposed by Motorola are not for use in the RDSS bands, but rather in the Ka-band. Thus, such operation is not truly related to Motorola's use of the RDSS band, and can not support a preference for RDSS band usage. The proposed spot beam technology is also not new or novel, but has been or will be employed in numerous other satellite systems, including those of AMSC, INTELSAT, U.S. domestic satellites as well as in the systems proposed by LQSS, TRW, Constellation and Ellipsat.

Motorola's claim that bidirectional use of the spectrum is innovative and supports its pioneer's preference request is similarly incorrect. As LQSS pointed out in its Opposition, bidirectional use of spectrum has been used for a number of years in a variety of telecommunications systems.²⁵ Moreover, in the case of a low-earth orbit system of the type Motorola proposes, Motorola has yet to demonstrate the workability of bidirectional operations.²⁶ In fact, AMSC, in its Technical Appendix, points out that the proposed bidirectional working of the Motorola system is likely to reduce the Iridium™ system capacity, "and will exacerbate the interference [the Motorola] system will cause to other users of the RDSS

²³ See, LQSS Opposition at 4, 5; TRW Opposition at 11-12; Constellation Opposition at 8; Ellipsat Opposition at 11; and AMSC Consolidated Opposition at 18.

²⁴ Id.

²⁵ See, LQSS Opposition at 5.

²⁶ See, TRW Opposition at 13, Ellipsat Opposition at 12, Constellation Opposition at 9, and AMSC Consolidated Opposition, Technical Appendix at 4.

bands."²⁷ Ellipsat highlights the fact that Motorola's use of the 1613.8-1626.5 MHz band in the space-to-Earth direction is on a secondary basis, e.g., Motorola cannot cause harmful interference to nor seek protection from any other system.²⁸ Motorola has nowhere explained how its bidirectional operation can operate feasibly within this constraint in the use of the band as a downlink.

With regard to Motorola's claim that the on-board processing to be used in its system is sufficiently innovative to deserve a pioneer's preference, it is noteworthy that Motorola has had an opportunity to develop expertise in on-board satellite processing for the NASA Advanced Communications Satellite (ACTS), at the expense of the U.S. taxpayer. In addition to ACTS, on-board signal processing is used in INTELSAT satellites, in the Satellite Business Systems network, the French TELCOM I system and the MILSTAR system.²⁹

Because of Motorola's reliance on its claimed innovations in the area of on-board processing, LQSS undertook a search of the scientific literature on that subject. This search identified numerous scientific articles and treatises on such technology, dating from 1973 to 1989. The abstracts of the articles can be found in Appendix C. This material lays to rest Motorola's claim that the use of on-board processing and switching is an innovation of the IridiumTM system.

Apart from Motorola's failure to demonstrate that its system is either innovative or that it is the innovator of the elements to be used in the proposed system, Motorola has failed to demonstrate that its system is financially feasible or that it can bring service to the public at a reasonable cost.³⁰ Motorola's system is currently estimated to cost \$3 billion. Even this price

²⁷ AMSC Consolidated Opposition, Technical Appendix at 4.

²⁸ Ellipsat Opposition, at 12.

²⁹ TRW Opposition, at 13.

³⁰ The technical feasibility of Iridium also remains uncertain. Motorola claims repeatedly, to be conducting tests or experiments. No results or data in this regard are provided in its comments, nor is any other demonstration of feasibility or viability.

could be substantially understated, as the size of the satellites grows.³¹ A substantial cost escalation in the price of the spacecraft would have an enormous impact on the system cost, and ultimately, the price of the service to users.

C. The Confidential Materials Filed by Motorola Should Not be Considered in this Pioneer's Preference Proceeding

Motorola, in an effort to support its request for pioneer's preference, submitted a variety of materials to the Commission, along with a request for confidential treatment of those materials. In its Supplement to Request for Pioneer's Preference filed April 10, 1992, Motorola claims that the results of its "propagation experiments and simulations of critical components in the design (of Iridium™)" are entitled to confidential treatment. Motorola also claims that its voice and data simulations are entitled to confidential treatment. Other material for which confidential treatment was requested include excerpts from pending patent applications. Motorola argued that these materials constitute trade secrets and other proprietary information and that the "premature disclosure of this material to Motorola's competitors...could have an adverse impact upon the relative position of Motorola in the marketplace."³²

LQSS as well as other parties in this proceeding, maintain that (1) the material for which confidentiality is requested by Motorola is not entitled to confidential treatment; (2) consideration by the Commission of such material violates the ex parte rules and denies the opportunity for full and open evaluation of the material on which Motorola bases its request for a pioneer's preference; and (3) Motorola has other legal remedies, including the copyright and patent laws, with which to safeguard its interests regarding the material submitted.³³

Despite the arguments of LQSS and others, the Commission determined that some of the

³¹ See, "Iridium Weight Grows," Space News, April 20-26, 1992, which states that, "the increase in spacecraft weight to about 1,370 pounds could have a profound impact on the eventual price tag of the multi-billion dollar effort to provide worldwide mobile telephone service." The article states that this estimate is almost 500 pounds larger than original estimates.

³² See, Motorola's Consolidated Reply to Oppositions to Request for Confidential Treatment, filed May 1, 1992.

³³ See, LQSS Opposition to Request for Confidential Treatment, April 23, 1992.

Motorola materials constituted trade secrets and commercial or financial information and would be accorded privileged or confidential treatment under Exemption 4 of the Freedom of Information Act, 5 U.S.C. § 552 (b)(4).³⁴ The FCC's Chief Engineer issued a Protective Order providing for disclosure to a limited group. The Commission and the parties are now faced with evaluation of material claimed to be proprietary by Motorola. This need for confidentiality -- or for use of the materials in this pioneer's preference -- is in no way confirmed by LQSS' examination of the documents.

First, the so-called test "results" provided in the confidential material, both that in written documentary form and on one of the videotapes, are difficult to evaluate, especially in the short time frame afforded for comment in this proceeding, and are irrelevant to the claim of innovativeness by Motorola. Second, the patent applications submitted by Motorola have no probative value with respect to a claim of innovativeness. Motorola has provided no explanation as to the nexus between these applications and its purported innovativeness. Moreover, patent applications without more do not demonstrate innovativeness or novelty.

IV. The Materials Covered by the Protective Order Do Not Demonstrate Innovativeness by Motorola

As discussed above, the Commission, in this proceeding, has moved far beyond its role as defined in the Communications Act, which is to "make available, so far as possible, to all the people of the United States a rapid, efficient, nationwide, and world-wide wire and radio communication service with adequate facilities at reasonable charges..."⁴⁷ U.S.C. § 151 (1988). By allowing the consideration of voluminous confidential materials of technical complexity, the Commission is moving into uncharted territory which leaves applicants and the public in the dark as to Commission standards, methodologies or bases for its decision-making. Such a situation is intolerable under the Administrative Procedures Act.

³⁴ See, Protective Order, in DA 92-674, FOIA Control No. 92-83, 92-88 and 92-86, released May 28, 1992 by the Chief Engineer, Federal Communications Commission.

A. The Commission Should Not Utilize Confidential Materials to Judge Innovation

The Commission does not have the mandate or the resources to become a super-patent examiner. Nor would such a role undertaken by the Commission serve the public interest. Instead, the Commission should move forward to implement the rulemaking addressing the spectrum allocation and technical issues with regard to use of the RDSS bands. It should move forward to evaluate the pending applications, including that of LQSS, for use of these bands. The Commission should not allow itself to be sidetracked into the consideration of material filed under seal which consumes resources as well as limits review by Commission staff and the public, and furthermore, has no probative value. The Commission should not allow itself to be sidetracked into reviewing patent applications, press clippings or the like.

As the Commission is rapidly discovering, being the judge of innovativeness may be a job best left to the patent forum.

B. The Materials Contained in the Motorola Confidential Filing are in Large Part Contained in other Motorola Filings, Articles and/or Public Documents

Despite Motorola's claims that the material for which confidential treatment was requested constitute trade secrets and proprietary matter, much of it is contained in Motorola's application, press releases, articles and other materials. Even material contained in the Motorola patent applications can be found in publicly available documents.

Motorola failed to provide the dates of filing of its patent applications. Absence of this critical information has made it impossible to evaluate the timing of Motorola's efforts or the relationship of those applications to the efforts of other entities, including Loral and Qualcomm. Motorola indicates that it has received patents in Europe in certain instances; however, it does not provide the dates on which these patents issued. Patent applications which are still pending in Europe and which have been on file for 18 months or more, are published by the European Patent Office, thus making the applications publicly available.

Consequently, some of the Motorola patent applications contained in the so-called "confidential material" may also have been released by the European Patent Office and thus may be available to the public at large. If such is the case, Motorola is incorrect in asserting a claim of privilege under the U.S. Freedom of Information Act for such material.

The statement of Wilbur L. Pritchard, a recognized authority in the field of communications satellites, provided in Appendix B discusses the Motorola confidential material and concludes that the material does not demonstrate the innovation required to justify a pioneer's preference. Such material has been filed in accordance with the Commission's procedures set forth in its Protective Order, DA 92-674.

C. Certain Material Which Motorola Has Filed in Support of its Request for Pioneer's Preference Is Inconsistent With and Contradictory to its Application

Motorola, in its supplemental filing in support of its Request for Pioneer's Preference, filed a document entitled "Papers for Chinese Publication." Motorola originally requested that the Commission accord this material confidential treatment. How Motorola could seriously request confidential treatment for papers that were, on their face, intended for publication -- that is, public distribution -- is beyond belief. When the Commission staff determined that this material was not entitled to such treatment, Motorola made the material available as a part of the public record.

The Papers for Chinese Publication, which provide an overview of the proposed Iridium™ system, as well as the business proposal and structure for the company, includes much material that contradicts the material contained in Motorola's system application, File Nos. 9-DSS-P-91(87), CSS-91-010. Among the discrepancies are the following.

First, there is a great disparity in the levels of demand projected in the application and in the Papers for Chinese Publication. Table III-1 (p. 34) of the application projects 4.7 million foreign users and 1.3 domestic users, for a total of 6.0 million users for Iridium™ by the year 2001. Page 4 of Item 3 of the Papers for Chinese Publication states a projected worldwide demand of 1.8 million users in the year 2001. By 2006, five years later, it projects 2.8 million users, still less than half the projected demand set forth in the application for the year 2001. It thus appears that the underlying application greatly overstates the projected demand for Iridium™ service.

Second, the Papers for Chinese Publication also state that the costs of subscriber units will be greater than the costs set forth in the Iridium™ application. According to the Papers for Chinese Publication (page 3 of Item 3), basic Iridium™ telephones will initially cost about

\$3,000 (in 1990 dollars) and pagers will cost not more than \$500. According to the application (page 38), basic Iridium™ telephones will cost \$2,000 (in 1990 dollars) and pagers \$200-\$300.

The submission by Motorola of material which contradicts its system application with regard to certain important aspects of that application in support of its pioneer preference raises troubling questions as to the weight the Commission should accord not only the Papers for Chinese Publication but all the other material filed by Motorola as part of its supplement to its request for pioneer's preference. The discrepancy between this material and the Motorola application is analogous to a clock striking 13 times. If this extensive document, submitted to the Commission, as well as used to obtain support from other nations for the Iridium™ system and to structure operating agreements, contains matter contradictory to the Motorola proposal on file, what conclusion can be drawn concerning the other supplemental material? Conversely, what conclusion can be drawn concerning the accuracy of the other information contained in the underlying application?

V. The Materials Covered by the Protective Order Do Not Demonstrate Innovativeness by Motorola

This section is being provided separately pursuant to the instructions in DA 92-674, Protective Order.

VI. LQSS Should be Granted a Pioneer's Preference

LQSS today will file material regarding its pending request for a pioneer's preference for the innovations to be utilized in the Globalstar™ system. LQSS has fully demonstrated that it deserves a preference in this proceeding. Granting a preference to LQSS would be consistent with the Commission's objectives in establishing a pioneer's preference, e.g., to encourage the development of new telecommunications technology, to promote spectrum efficiency, to enable multiple entry, and to provide new, low-cost service to the public. Moreover, a grant of a pioneer's preference to LQSS would not preclude grant of licenses to other RDSS LEO MSS applicants.

A. LQSS Has Demonstrated that the Technology Developed For and to be Used in the Globalstar™ System is Innovative and Deserves a Pioneer's Preference

LQSS has established that Globalstar™ merits a pioneer's preference because it is a technologically innovative and feasible system which will provide new and enhanced services to benefit the public interest. In its original request for a pioneer's preference, filed with the Globalstar™ application June 3, 1991, and in the separate pleading filed November 4, 1991, concurrently with LQSS' Petition for Rulemaking, LQSS described innovative technology which supports its request.

LQSS has now filed additional publicly available material to supplement the original request for Pioneer's Preference. The supplemental information includes various patents recently issued by the U.S. Patent & Trademark Office. These patents, which were filed in the period between 1986 and 1990, cover several key aspects of the pioneering innovations which will be utilized in the Globalstar™ system.

Globalstar™ incorporates innovative system design features, as well as patented CDMA spread spectrum techniques for spectrum reuse, creating a high-capacity, low cost system. To date, Qualcomm has received seven patents for pioneering aspects of its CDMA technology, with more pending. Some of the key technology required to implement the Globalstar™ CDMA system, including recently patented material, is included for reference in Appendix A. The technology incorporated into Globalstar™ from these inventions allows Globalstar™ to provide new and enhanced communications services by greatly increasing the call capacity available for a limited amount of spectrum and by concurrently improving the reliability of the signals.

LQSS shareholder Qualcomm's CDMA research has been in progress since the mid-1980s, as evidenced by its filing on October 17, 1986, an application for a broad system patent describing the use of CDMA in the type of satellite system proposed by LQSS. U.S. Patent No. 4,901,307 (Appendix A) was issued for this innovation in satellite communications. This patent demonstrates that the use of CDMA achieves a much higher spectral efficiency than the use of other multiple access techniques. The basic system patent covers the concept of "marginal isolation gain," a generic term for capacity gains through exploitation of such system elements as multiple beam antennas, polarization reuse, frequency reuse by adjacent satellites and co-

coverage by adjacent satellites, all made possible through the use of spread spectrum CDMA techniques. Developing this ability to increase capacity is a true breakthrough in the design of satellite communications systems, now incorporated into Globalstar™. Through Globalstar™'s CDMA system, limited spectrum can be used to provide radiodetermination, as well as voice and data services, in a reliable manner and with increased capacity over existing technology, thereby improving communications services available to the consumer.

Additional patents have been issued, covering innovative research embodied in the Globalstar™ system design for the "soft handoff" system, RAKE receiver architecture and a method for combining pseudo-random binary codes with orthogonal binary codes. The technology covered by these patents improves Globalstar™ call quality and system reliability.

Issuance of the patents described above illustrates the innovative nature of the technology which is the subject of LQSS' request for a pioneer's preference. These patents demonstrate that the innovations embodied in Globalstar™ have been under development for several years, establishing that the Globalstar™ system is truly a pioneer LEO MSS system, and that research, development and implementation related to it were accomplished prior to the efforts of other applicants.

B. The Innovations to be Used in the Globalstar™ System Have Been Validated through Experiments and Tests

Along with research and development in these pioneering technologies, a systematic program of testing has been undertaken to validate the technical concepts and demonstrate their operational feasibility, efficiency and resulting quality of service. The results of these tests not only show that Globalstar™ will provide beneficial service, but also that the technology for which patents have been issued can be used directly in the proposed satellite communications system.

One of the first tests was conducted in California in 1986, which successfully demonstrated that CDMA could be used for mobile voice communications using satellites. The tests demonstrated that the transmit power of the mobile terminal can be controlled, permitting the single satellite transponder to operate with a large number of mobile terminals, increasing the capacity of the system. The tests also showed that power could be dynamically allocated,